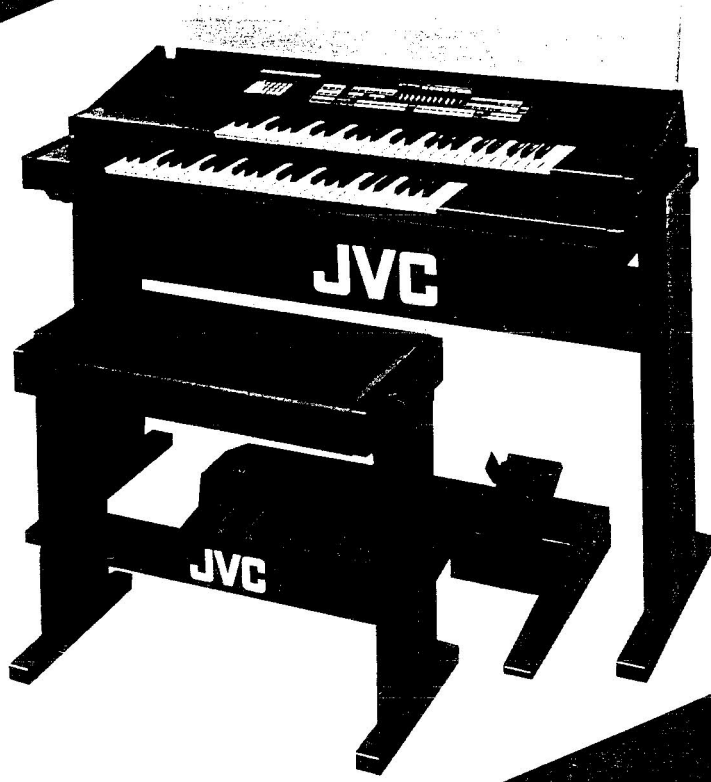
JVC

System Keyboard NS-50



OWNER'S MANUAL

IMPORTANT (in the United Kingdom)

Mains Supply (AC 240 V~, 50 Hz only)

Do not make any connection to the Larger terminal coded E or coloured Green. The wires in the mains lead are coloured in accordance with following code:

Blue to N (Neutral) or Black
Brown to L (Live) or Red

If these colours do not correspond with the terminal identifications of your plug, connect as follows:
Blue wire to terminal coded N (Neutral) or coloured Black.
Brown wire to terminal L (Live) or coloured Red.
If in doubt – consult a qualified electrician.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTIONS

- For AC operation, use only the power cord provided to prevent danger.
- Disconnect the AC plug when not in use.
- To prevent electric shock, do not remove screws, covers or cabinet. No user-serviceable parts inside. Refer servicing to qualified service personnel.

Voltage selector

The voltage selector is located on the rear of the instrument. Before connecting the power cord to an AC outlet, check that the correct voltage (120 V, 220 V or 240 V) for your area has been selected.

Thank you for purchasing JVC's NS-50 System Keyboard. Before switching on, be sure to read the precautions below. To get full enjoyment from your NS-50, study this owner's manual. After reading, keep the manual handy for future reference.

PRECAUTIONS

- Use only the power cord provided.
- Disconnect the power cord immediately in the event of an electrical storm.
- In the event repair is required, see your local dealer or JVC-authorised service agency. Do not attempt any internal adjustments or repairrs.
- Avoid storing the instrument
  - under the direct rays of the sun;
  - near a heater, stove, fireplace or other heat sources;
  - in extremely dusty environments or places subject to high vibrations.
- To clean the unit, use a dry cloth or one moistened with water or a neutral detergent.

When this unit is used with audio amplifier and speakers, to prevent damaging the speakers keep the volume at normal playing level.
For the right combination of amplifier and speakers to be used, consult your dealer.

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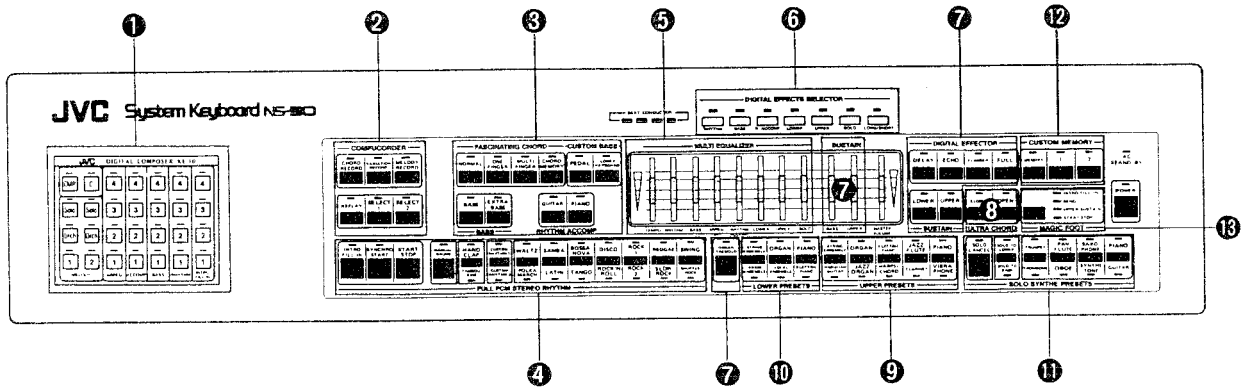
FRONT CONTROL PANEL



❶ Digital Composer (pp. 7 – 15)
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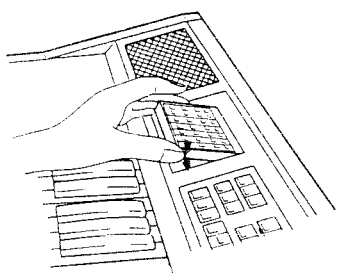
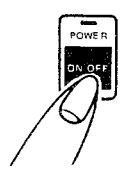
PREPARATION



1 Connect the power cord provided. (The AC STANDBY indicator lights.)

2 Insert the DIGITAL COMPOSER provided.



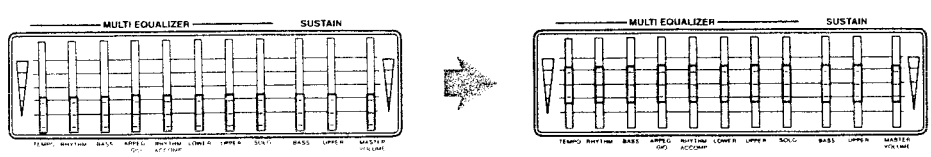
3 Press the POWER switch.

Pressing the switch again turns the power off.

- All the other flat switches on the control panel function in the same way, alternating between on/off or above/below each time the switch is pressed.

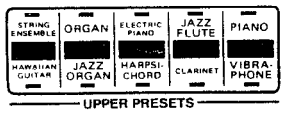
MULTI-EQUALIZER

The volumes of the seven channels of sound are controlled so that their balance can be checked at a glance. Use the MASTER VOLUME control to adjust the overall volume.
Before playing set all slide controls to the center positions.



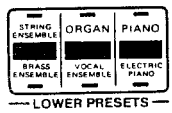
UPPER PRESETS, LOWER PRESETS & SOLO SYNTHE PRESETS

UPPER PRESETS



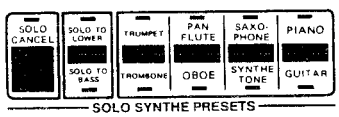
For the upper manual, 10 polyphonic preset voices can produce up to 8 notes at a time.

LOWER PRESETS



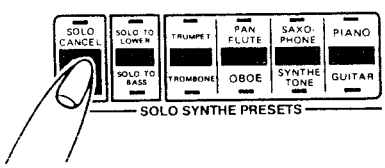
For the lower manual, 6 polyphonic preset voices can produce up to 8 notes at a time.

SOLO SYNTHE PRESETS



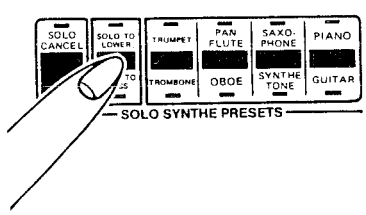
8 monophonic voices. When more than one key is preseed, only the highest note will be produced.

SOLO CANCEL



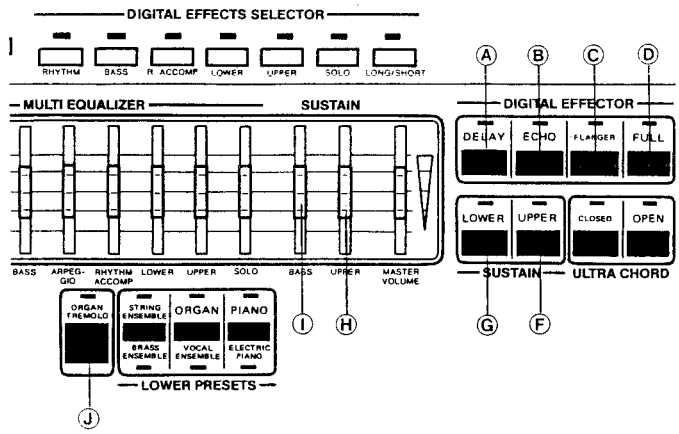
The SOLO SYNTHE PRESETS are muted when this switch is on. To play the SOLO SYNTHE PRESETS, set this switch to off (so that the LED is off) and adjust the volume with the SOLO control of MULTI-EQUALIZER.

SOLO TO LOWER/SOLO TO BASS



SOLO SYNTHE PRESETS are usually played on the upper manual but they can also played on the lower manual or as bass voice using this switch.
The first time the SOLO TO LOWER/SOLO TO BASS swtich is pressed, the SOLO TO LOWER LED lights, indicating that the SOLO SYNTHE PRESETS are played on the lower manual.
When the switch is pressed again, the SOLO TO BASS LED lights and the normal bass voice or the bass voice played on the Pedal Keyboard is replaced with the voice selected by SOLO SYNTHE PRESETS.
The third time it is pressed, the normal condition resumes and SOLO SYNTHE PRESETS are played on the upper manual.

DIGITAL EFFECTOR, SUSTAIN & ORGAN TREMOLO



DIGITAL EFFECTOR

Three useful effects are provided.

1 Select one of DELAY, ECHO, or FLANGER.

Ⓐ **DELAY**

Causes sounds to be repeated in a manner similar to tape echo.

Ⓑ **ECHO**

A reverb-like effect that gives the impression of playing in a concert hall.

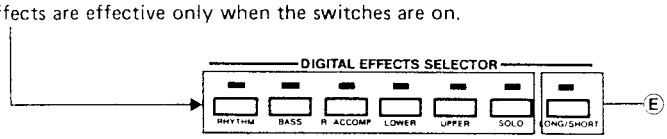
Ⓒ **FLANGER**

A very modern effect that adds a kind of swirling sound to sustained chords.

2 When the FULL switch Ⓓ is pressed so that the LED lights, the selected effect becomes more prominent.

3 The effect can be switched on/off individually for each of six sound channels (SOLO SYNTHE PRESETS, UPPER PRESETS, LOWER PRESETS, RHYTHM ACCOMP, BASS and RHYTHM).

The effects are effective only when the switches are on.



Ⓔ **LONG/SHORT**

This switch determines the depth of each effect.

SUSTAIN

Sounds of UPPER PRESETS, LOWER PRESETS and BASS are sustained even after the keys are released, so the sound fades away gradually.

Ⓕ **UPPER SUSTAIN**

Optimum sustain length has been preset for each voice of UPPER PRESETS.
To change sustain length, press the UPPER SUSTAIN switch and move the UPPER SUSTAIN slide control Ⓗ as desired. Normally, set the control to the center position.

Ⓖ **LOWER SUSTAIN**

To increase sustain length, press the LOWER SUSTAIN switch.

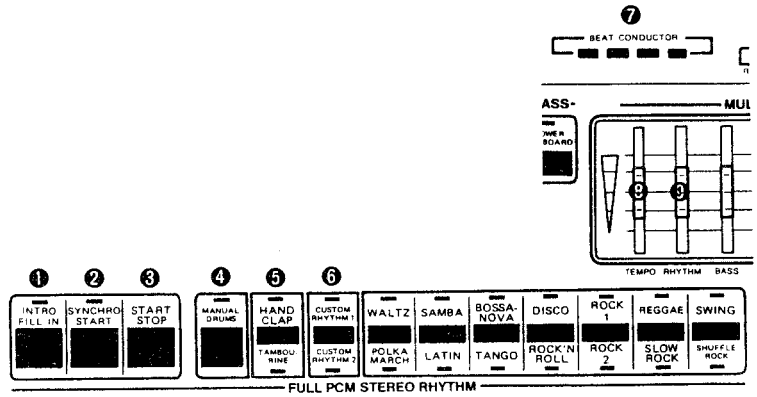
Ⓘ **BASS SUSTAIN**

The sustain length of bass voices is variable. Slide the BASS SUSTAIN control up to increase sustain and down to decrease it. Normally, set the control to the center position.

ORGAN TREMOLO Ⓙ

The tremolo effect can be given to the Organ and Jazz Organ voices.

FULL PCM STEREO RHYTHM & MANUAL DRUMS



❶ **INTRO/FILL IN**
Press this switch to add a rhythmic introduction to a tune. Also, when the INTRO/FILL IN switch is pressed during a tune, a rhythm break is inserted.

❷ **SYNCHRO START**
When the SYNCHRO START switch is pressed, rhythm starts when one of the lower keys is pressed.

❸ **START/STOP**
Press to start or stop the selected rhythm.

❹ **MANUAL DRUMS**
When the switch is on, lowest 23 keys of the lower manual produce percussion sounds instead of preset voices. The assignment of the percussion instruments is shown in the illustration on page 11.

❺ **HAND CLAP/TAMBOURINE**
This switch adds hand claps or tambourine to the rhythm. Pressing this switch once changes the added percussion from hand clap to tambourine. Press it again and neither hand claps nor tambourine will be heard. The third time it is pressed, hand claps will be resumed.

❻ **CUSTOM RHYTHM 1/2**
The rhythm, intro/fill-in, bass, accompaniment and arpeggio variation patterns composed using the DIGITAL COMPOSER can be stored in these tracks and recalled at any time by pressing one of these switches.

❼ **BEAT CONDUCTOR**
The tempo and beat of rhythm are indicated by the BEAT CONDUCTOR LEDs.

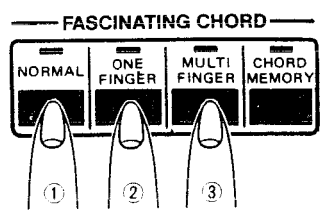
❽ **TEMPO**
Used to adjust the rhythm tempo. Slide up to increase the tempo and down to decrease it.

❾ **RHYTHM**
Used to adjust the sound level of percussion. Slide up to increase the volume and down to decrease it.

FASCINATING CHORD (Automatic Accompaniment)

FASCINATING CHORD is a JVC original automatic accompaniment system using the latest computer technology.

① When automatic accompaniment is not necessary	② When you do not know how to play chords on a keyboard	③ When you can play complex chords on a keyboard
①	②	③
Press the NORMAL mode switch.	Press the ONE FINGER mode switch so that the LED lights.	Press the MULTI FINGER mode switch so that the LED lights.
①	②	③



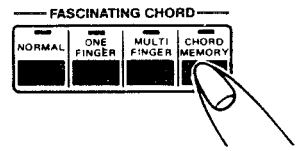
①

Play melody and accompaniment manually.

②

Start rhythm and press lower manual keys. (For ONE FINGER or MULTI FINGER chord generation, see below.)
When the CHORD MEMORY function is used, the same accompaniment is repeated until the next time a lower manual key is pressed.

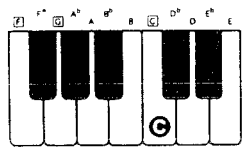
CHORD MEMORY
Press the CHORD MEMORY switch so that the LED lights.



②

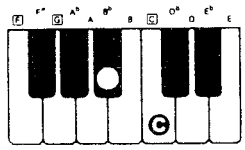
ONE FINGER
Major, minor, seventh and minor-seventh chords can be played with one to three fingers of the left hand.

Major chords
Example: C



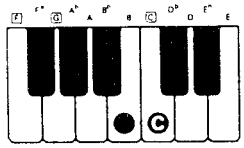
Press one of the C keys and the C major chord (Do-Mi-So harmony) is produced.

Minor chords
Example: Cm



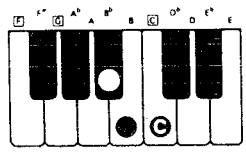
Press the C key together with any black key to the left of it.

Sevenths
Example: C7



Press the C key together with any white key to the left of it.

Minor sevenths
Example: Cm7

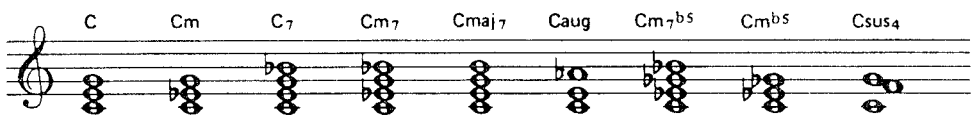


Press the C key together with any black key and any white key to the left. (all three keys together).

③

MULTI FINGER
Automatic accompaniment is possible with the chords played on the keyboard.

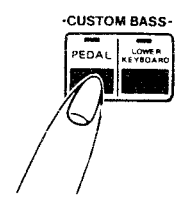
The following nine chords can be played in any key.
(9 types x 12 notes = 108 chords)



* For diminished chords, the lowest key pressed becomes the root key.

CUSTOM BASS

When the optional Pedal Keyboard is connected, pressing the PEDAL switch cancels the bass sound even if the Fascinating Chord is used. The bass sound is produced according to notes played on the pedal keyboard.

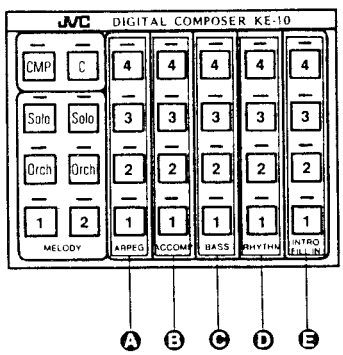


Hint for playing when you cannot follow the rhythm

Set the CHORD MEMORY to off and SYNCHRO START to on. Rhythm and auto accompaniment play only when lower manual keys are pressed and stop when the keys are released. Rhythm and auto accompaniment re-start from the first beat when lower manual keys are pressed again.

– To Give Variations to the Parts of FASCINATING CHORD. –

The FASCINATING CHORD consists of five parts; rhythm, bass, arpeggio, rhythm accompaniment (guitar/piano) and accompaniment (strings or LOWER PRESETS). The rhythm (plus intro/fill-in), bass, arpeggio and rhythm accompaniment are provided with four variations per basic rhythm. Desired variations can be selected using variation switches [1] to [4] of the DIGITAL COMPOSER.



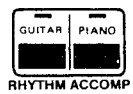
Ⓐ ARPEGGIO

Arpeggio is played by piano.

Ⓑ RHYTHM ACCOMP

Rhythm guitar or rhythm piano voice can be selected.

When the RHYTHM ACCOMP GUITAR switch is selected, cutting guitar with a wah effect is played in ACCOMP [4] variation of the DIGITAL COMPOSER.

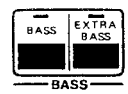


Ⓒ BASS

One of two bass voices can be selected with the BASS switches.

BASS: Normal bass sound

EXTRA BASS: The funky sound of chopper bass with added notes that bend and slide.



SOLO TO BASS:

SOLO SYNTHE PRESETS can be played as bass voices.

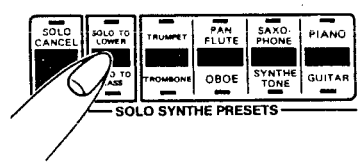
Press the SOLO TO LOWER/SOLO TO BASS switch twice so that the SOLO TO BASS LED lights.

In this case, adjust bass volume with the SOLO control of Multi Equalizer. (Make sure "SOLO CANCEL" is off.)

To go back to the original bass voice, press the switch again.

Note:

SOLO TO LOWER is activated first time the SOLO TO LOWER/SOLO TO BASS switch is pressed, SOLO TO BASS is activated the second time, and the third time, neither.

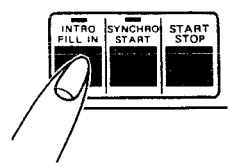


Ⓓ RHYTHM

4 variations are preset for each basic rhythm. (14 x 4 = 56 preset rhythms)

Ⓔ INTRO/FILL IN

The intro/fill-in, with variation patterns selected on the DIGITAL COMPOSER, is played only when the INTRO/FILL IN switch is pressed.

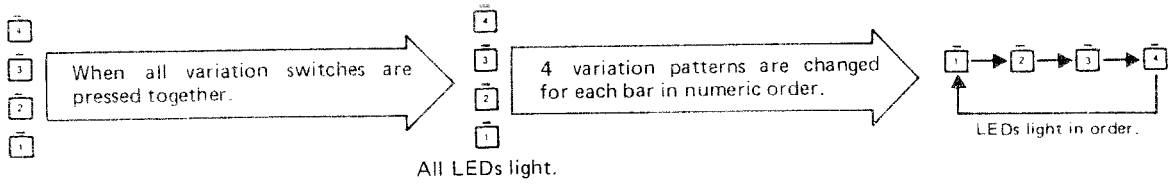


LOWER

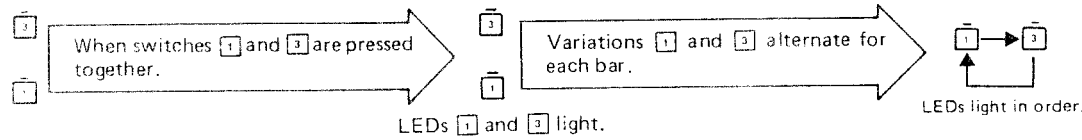
The sound of accompaniment is either continuous (with String Ensemble, Organ, Vocal Ensemble or Brass Ensemble) or discontinuous (with Piano or Electric Piano).

Variation patterns of the DIGITAL COMPOSER can be changed automatically at each bar.

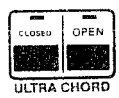
Example 1


When all variation switches are pressed together.
4 variation patterns are changed for each bar in numeric order.
LEDs light in order.
All LEDs light.

Example 2



ULTRA CHORD (Automatic Harmony)



With ULTRA CHORD on, harmony according to the chords played on the lower manual is automatically added to the melody played on the upper manual.
There are two types of harmonies, OPEN and CLOSED.

CLOSED Harmonies within one octave, similar to the block play of jazz piano or organ.

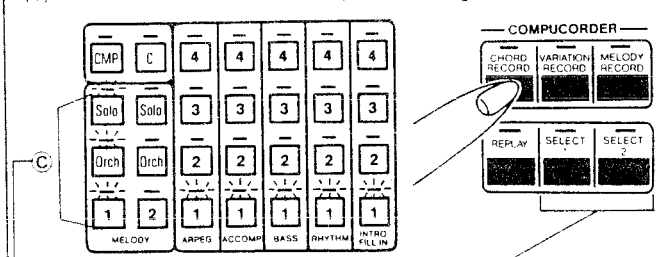
OPEN Harmonies extending over one octave, as in big band arrangments.

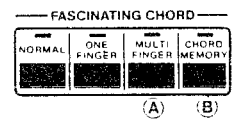
*Even when the ULTRA CHORD switch is set to "CLOSED" or "OPEN" harmony will not be added to the melody if no chord is being played on the lower manual of if no chord has been recorded in the COMPUCORDER.

COMPUCORDER (To Arrange and Store Tunes in Memory)

1 To record a whole performance as it is played;

(1) Press the chord record switch, the LEDs light or blink as shown.



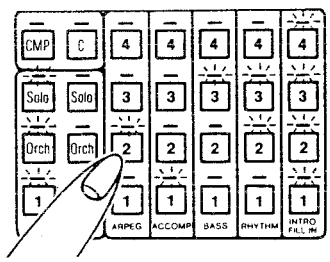


Ⓐ Press the MULTI FINGER switch to play in the MULTI FINGER mode.
Ⓑ When the CHORD MEMORY switch is pressed on, the accompaniment continues even after the left-hand keys are released.

*If LEDs do not light as shown, switch the power OFF and try again.

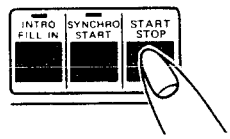
(2) Select SELECT 1 or 2.
Ⓒ MELODY 1 is selected automatically when SELECT 1 is pressed, and MELODY 2 when SELECT 2 is pressed.

(3) Select variation patterns to embellish the tune to be recorded and press their switches. (LEDs blink.)

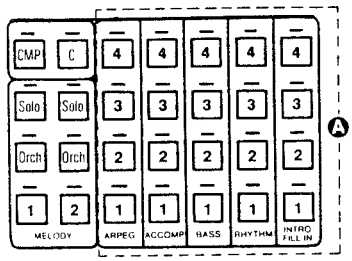


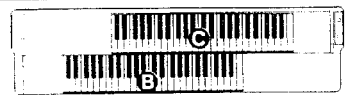
Both the Orch (for UPPER PRESETS) and Solo (for SOLO SYNTHE PRESETS) LEDs blink automatically indicating that the voices of both the UPPER PRESETS and SOLO SYNTHE PRESETS will be recorded and replayed. To record/replay a voice from the UPPER PRESETS only, press the Solo switch before recording so that the LED goes off. To record/replay only a voice from the SOLO SYNTHE PRESETS, press the Orch switch before recording so that the LED goes off.

- Up to 80 bars (with minimum unit 1 chord/beat) and up to approx. 495 notes of melody per track can be recorded. When both SELECT 1 and SELECT 2 are pressed, the tracks can be used continuously, with a capacity of 160 bars and approx. 1000 notes.



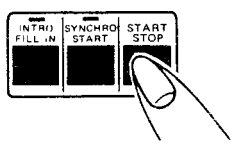
(4) Start rhythm to start recording. To start rhythm, press the START/STOP switch or use the SYNCHRO START function.





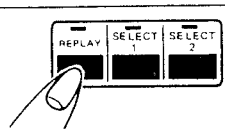
Ⓐ Variations are recorded as switches are changed.
Ⓑ Chords are recorded as they are played on the lower manual.
Ⓒ Melody is recorded as it is played on the upper manual.
(Only monophonic melody is recorded.)

If you cannot play chords and melody and change variations at the same time, start with chord recording alone and later proceed to record melody (operation 3 below) then change accompaniment variations (operation 4).



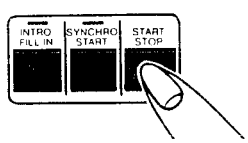
(5) Press the START/STOP switch to stop rhythm.
- If you do not change accompaniment variation switches [1] [2] [3] [4] when you record chords, variations [1] are recorded for all parts.
- All previously-recorded memories are cleared when the CHORD RECORD switch is pressed and rhythm is started. Thus, before proceeding to recording 3 melody alone or 4 accompaniment variation alone, make sure that the CHORD RECORD switch is off.

2 To replay the recorded tune



To Replay the Recorded Tune

(1) Press the REPLAY switch so that its LED lights. The LEDs of SELECT 1 (or SELECT 2) also light at this time.
To replay SELECT 1 and SELECT 2 continuously, press the two switches at the same time.



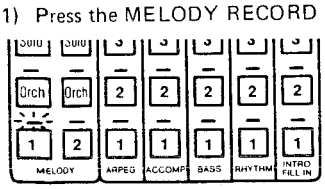
(2) Press the START/STOP switch to start replay. You can play a supporting melody together with the replayed melody.

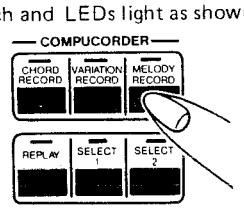
(3) Press the START/STOP switch again to stop replay of accompaniment and melody.

- When the replay of melody is not required, press MELODY switch [1] and/or [2] so that the LEDs go off, after pressing the REPLAY switch and starting the rhthm. Melody is not played in the replay. To resume melody in the middle of the replay, press MELODY switch [1] and/or [2] so that the LEDs light. When the recorded tune is replayed more than two times (2 cycles), the melody [1] LED lights and the melody is replayed from the beginning of the second cycle even if the melody has been muted during the first cycle by pressing the melody [1] or [2] switch.

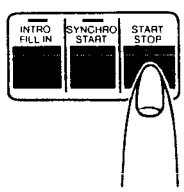
3 To record melody alone

(1) Press the MELODY RECORD switch and LEDs light as shown below.





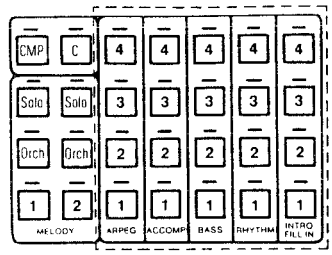
Press either SELECT 1 or SELECT 2.
Check that CHORD RECORD is off.



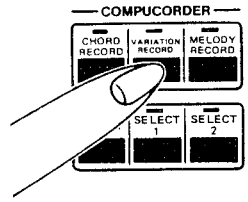
(2) Start rhythm and play the melody on the upper manual.

(3) Melody recording stops automatically at the end of the number of bars for which chords have been recorded.

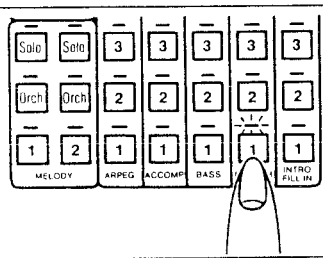
4 To record variations alone



(1) Press the VARIATION RECORD switch.

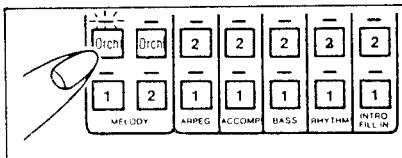


All variation switches on the Digital Composer go off.

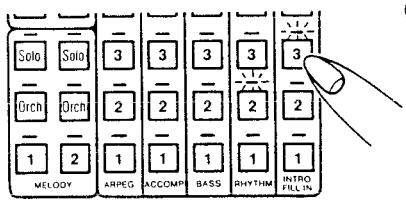


(2) Among the variations of RHYTHM (together with INTRO/FILL IN), BASS, ACCOMP and ARPEGGIO, press variation switches [1] [2] [3] or [4] so that the LEDs blink.

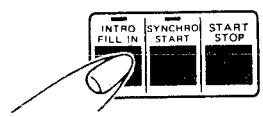
If you do not want to change particular variation patterns as they were recorded in CHORD RECORD (operation [1]), do not press the variation switch.
When a variation switch is pressed twice, the LED that was lit goes off and the part is muted.



(3) It is also possible to replay the recorded melody using the voices of UPPER PRESETS alone, SOLO SYNTHE PRESETS alone, or both. Press either or both of the [Orch] and [Solo] switches as desired.



(4) Start rhythm and change variation patterns by pressing the variation switches as desired. Pattern sequences are recorded as they are pressed.



To insert intro/fill-in, press the INTRO/FILL IN switch while selected INTRO/FILL IN variations switch [1] [2] [3] or [4] is blinking.

(5) Rhythm stops automatically at the end of the number of bars for which chords have been recorded.

- When sound of any part is not required at the beginning of a tune (to mute the part), press one of variation switches [1] [2] [3] [4] so that its LED blinks, then press the same switch so that the LED goes off, and start the rhythm.
- Any one of RHYTHM, BASS, ACCOMP and ARPEGGIO pattern sequences can be re-arranged by pressing a variation switch so its LED blinks. When re-arranging more than one sequence, press variation switches so that more than one LED blinks.
- To record intro/fill-in for the first bar of a tune, press the INTRO/FILL IN switch immediately after starting the rhythm (within the first half of the 1st bar, or within one beat when Waltz is selected). When the pattern sequence recording is started by pressing the INTRO/FILL IN switch alone, the intro/fill-in variation pattern will not be recorded for the first bar.

CUSTOM RHYTHM (Composition of Rhythm and Fascinating Chord)

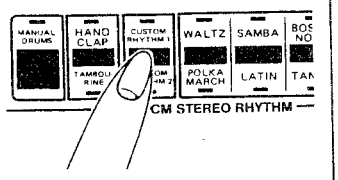
The accompaniment patterns of FASCINATING CHORD, i.e. rhythm, intro/fill-in, rhythm accompaniment, bass and arpeggio, can be composed as desired and stored in the DIGITAL COMPOSER. Additional DIGITAL COMPOSER packs can be obtained from your JVC dealer.

There are two methods of composition: [1] Creation of entirely new patterns, and [2] Modification of preset patterns.

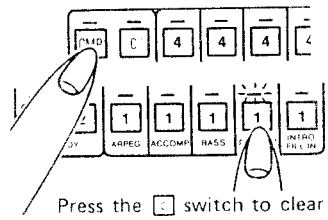
[1] Creation of Entirely New Patterns

[A] Creation of rhythm patterns

(1) Select CUSTOM RHYTHM 1 (or 2). Make sure that rhythm is not running.

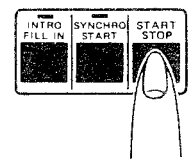


(2) Press the [EMP] switch then press one of RHYTHM variation switches [1] [2] [3] [4]. The green [EMP] LED and the red LED of the selected variation switch blink.



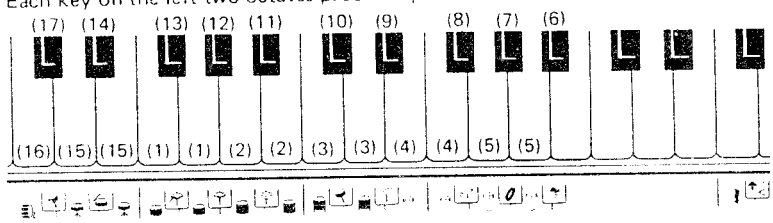
Press the [C] switch to clear old data of tune previously recorded.

(3) With a slower tempo, start rhythm.



(4) With the electronic metronome tone keeping time (the volume of this can be controlled by Arpeggio control), compose a rhythm by hitting the keys that correspond to the desired percussion instruments. Percussion sounds are recorded in one-bar patterns.

Each key on the left two octaves produces percussion sounds as shown below.



Note:
Only one percussion sound can be produced from each channel at any one time.

CH1	*	(1)	HT:	High tom-tom
	*	(2)	MT:	Middle tom-tom
	*	(3)	LT:	Low tom-tom
	*	(4)	SC:	Small conga
		(5)	LC:	Large conga
CH2		(6)	HC:	Hand clap
		(7)	TB:	Tambourine
CH3		(8)	CB:	Cowbell
	*	(9)	CY:	Cymbal
CH4		(10)	CA:	Cabasa
		(11)	OH:	Open high-hat
	*	(12)	CHH-2:	Closed high-hat (2)
	*	(13)	CHH-1:	Closed high-hat (1)
CH5		(14)	RS:	Rim shot
	*	(15)	SD:	Snare drum
CH6	*	(16)	BD:	Bass drum
		(17)	CA:	Cabasa

Accent ( ) key ($F\sharp_3$):
When composing an original rhythm variation pattern, accent can be given to instruments marked with an asterisk (*) by pressing this key together with the key for the instrument. This key is also used for composition of accompaniment patterns using cutting guitar and extra bass.

Rest ( ) key (F_3):
Use to mute the sound of percussion instruments (when composing RHYTHM), notes (when composing BASS or ARPEGGIO) or rhythm guitar/piano (when composing ACCOMP). Press keys assigned for the instruments or note while pressing this key; the instrument or note will be cleared from the CUSTOM RHYTHM memory created with the DIGITAL COMPOSER.

- Percussion is reproduced through six channels and only one instrument per channel can be played at a time. When, for example, cymbal and cowbell are played together, only one will be recorded. When they are played one after another, the sustain of the cymbal is cut the moment the cowbell is played.

(5) Each percussion instrument can be recorded separately and superimposed while the one-bar cycles are repeated. The minimum beat unit is and notes shorter than this are converted to this unit. A complex rhythm is input more easily by slowing down the tempo.

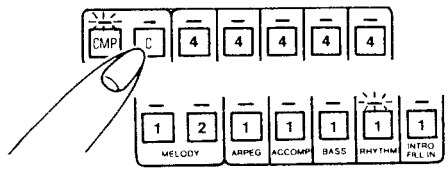
(6) Sounds input by mistake or those you don't like can be cleared after recording, without stopping rhythm.

① To clear everything and restart from the very beginning:

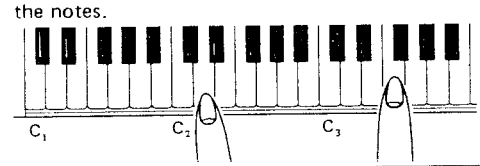
② To clear only some notes of a certain instrument:

Check that the green CMP LED blinks. (If not, go back to (1).)

Press the C switch.



While pressing the rest key (𝄽), press the key to be muted for the period you want to clear the notes.



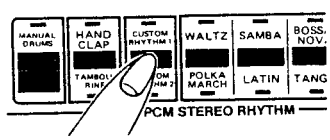
Keep the rhythm running and add new instruments as desired.

(7) Stop rhythm when you have completed the composition.

- Accent can be added to the tom-tom, cymbal, closed high-hat, snare drum or bass drum rhythm voice. To add accent, hit the keys for each percussion instrument while pressing the accent key (𝄢).
- Cabasa can be played with two keys, the lowest C# and $C\#_2$, one octave above. To delete the cabasa sound, use the same key with which it was composed.
- The INTRO/FILL IN variation patterns can be created in the same way as the RHYTHM patterns.

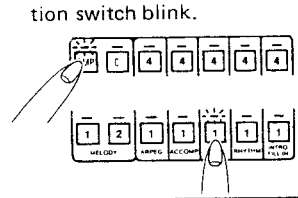
B Composition of BASS patterns

(1) Select CUSTOM RHYTHM 1 (or 2).

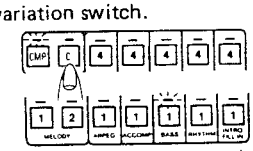


Select either BASS or EXTRA BASS.

(2) Press the CMP switch then press one of BASS variation switches 1 2 3 4. The green CMP LED and red LED of the selected variation switch blink.

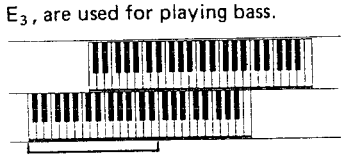


(3) Press the C switch to clear the bass variation pattern which has been previously recorded for the selected variation switch.



The previously recorded bass pattern has now been cleared.

(4) Press the START/STOP switch to start rhythm and play bass pattern with the rhythm. On the lower keyboards the keys between C_1 and E_3, are used for playing bass.



Bass composition range

Note: When composing bass, always play patterns in the key of C major.

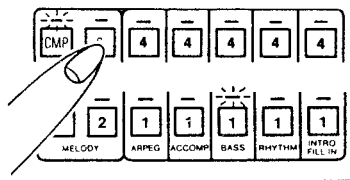
(5) Two methods are possible for changing the recorded bass pattern.

① To clear everything and restart from the very beginning:

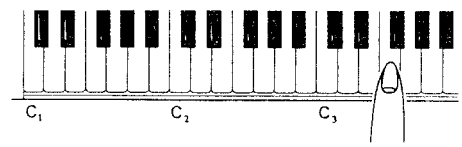
② To clear only some notes:

Check that the rhythm is running and green [CMP] LED blinks. (If not, go back to (1).)

Press the [C] switch.



Press the rest key (𝄽) for the period you want to clear the bass notes.



Play new bass pattern.

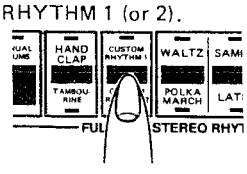
Add new notes as desired.

(6) Stop rhythm when you have completed the composition.

Note:
Chopper bass can be obtained when the EXTRA BASS switch is pressed, and accent can be added to chopper bass notes. To record with accented notes, press the accent key (𝆏<) while playing bass pattern or, first play the pattern and in the same condition (do not stop rhythm) press the accent key (𝆏<) at the same instant the notes requiring emphasis are heard.

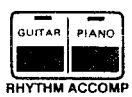
[C] Composition of ACCOMP patterns

(1) Press CUSTOM RHYTHM 1 (or 2).

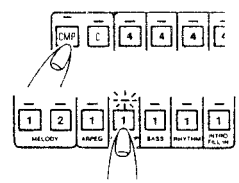


Make sure that rhythm is not running.

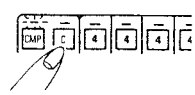
(2) Select either GUITAR or PIANO voice with the RHYTHM ACCOMP switches.



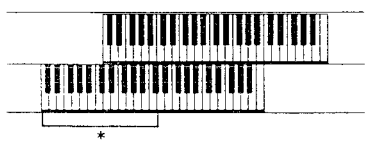
(3) Press the [CMP] switch then press one of ACCOMP variation switches [1] [2] [3] [4].
The green [CMP] LED and the red LED of the selected variation switch blink.



(4) Press the [C] switch to clear the accompaniment pattern which has been previously recorded by the selected variation switch. The previously recorded accompaniment pattern has now been cleared.



(5) Press the START/STOP switch to start rhythm and play rhythm accompaniment pattern with the rhythm. Any key between C_1 and C_3 on the lower manual produces the same accompaniment sound.



* Accompaniment composition range

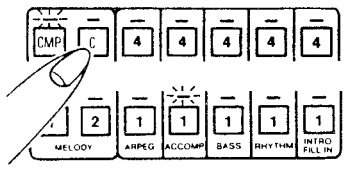
(6) Two methods are possible for changing the recorded rhythm accompaniment pattern.

① To clear everything and restart from the very beginning:

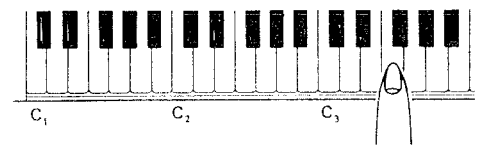
② To clear only some beats:

Check that the rhythm is running and green [CMP] LED blinks. (If not, go back to (1).)

Press the [C] switch.



Press the rest key (𝄽) for the period you want to clear the sound.



Play new accompaniment pattern.

Add new notes to the blank space.

(7) Stop rhythm when you have completed the composition.

Note: Cutting guitar has two kinds of strokes, up and down. Down strokes are produced by the operation above. To compose upstrokes, hit the keys between C_1 and C_3 while pressing the accent key (𝆏). Or first play pattern and while rhythm is still playing press the accent key (𝆏) on the chords to be changed into upstrokes.

D. **Creation of ARPEGGIO patterns**

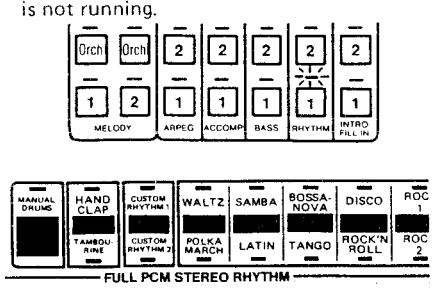
The ARPEGGIO pattern are composed in the same way as are the BASS patterns. See pages 12 to 13.

2 Modification of Preset Patterns

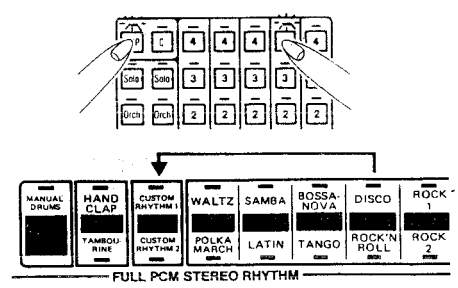
First transfer (copy) the preset pattern to be modified then modify it. All patterns of rhythm, intro/fill-in, bass, rhythm accompaniment and arpeggio are transferred by the same method.

Example To transfer DISCO variation [1] to CUSTOM RHYTHM 1 variation [4]:

(1) Press the switch of the FULL PCM STEREO RHYTHM and switch to be modified, DISCO [1] in this example. Make sure that rhythm is not running.



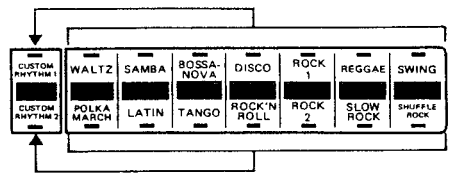
(2) To transfer DISCO [1] to CUSTOM RHYTHM 1 [4], press the [CMP] switch (the green LED lights) and press variation switch [4] (red LED blinks). The DISCO LED goes off and CUSTOM RHYTHM 1's LED automatically comes on.



(3) Press the START/STOP switch to start rhythm: CUSTOM RHYTHM [4] now produces the same rhythm variation pattern as DISCO variation [1]. (With rhythms composed in two-bar cycles, only the first bar is transferred.)

(4) Modify the variation pattern of DISCO [1] in CUSTOM RHYTHM [4], using the same modification method as " [1] creation of Entirely New Patterns" on page 11. (But, of course, do not use the [C] switch.)

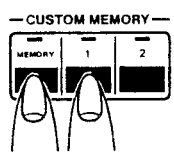
Note:
Variation patterns of the seven rhythms in the upper row can be transferred to CUSTOM RHYTHM 1, and those in the lower row, to CUSTOM RHYTHM 2.



- The [C] switch operation is possible only during composition (with green [CMP] LED and red LED of the selected variation switch blinking).
- The [CMP] switch is not effective when the rhythm is running.

CUSTOM MEMORY (Registration Memory)

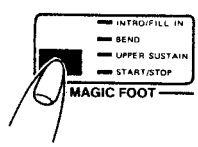
Switch settings of the SOLO SYNTHE PRESETS, UPPER PRESETS, LOWER PRESETS, RHYTHM ACCOMP, BASS, EFFECTS, DIGITAL EFFECTOR, ORGAN TREMOLO, ULTRA CHORD, SUSTAIN SWITCHES, MAGIC FOOT and FASCINATING CHORD can be stored in memory. Two different settings can be stored in the memory.



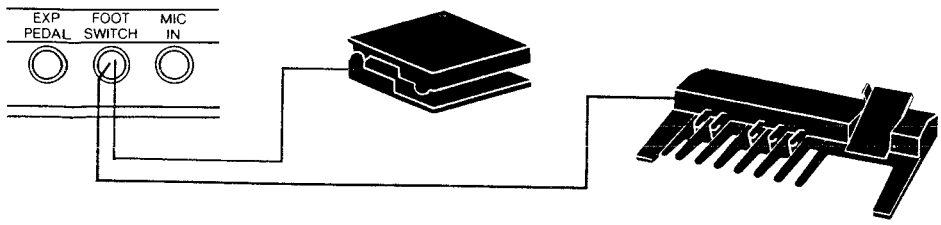
(1) After setting the switches of the above sections, press the "1" (or "2") switch while pressing the MEMORY switch.
(2) The stored setting can then be recalled by just pressing the "1" (or "2") switch. (The LED lights.)
(3) To go back to the original setting, press the "1" (or "2") switch again. (The LED goes off.)

- The recalled setting can be modified manually without affecting the memory itself. The settings in memory can be recalled again by just pressing the "1" (or "2") switch twice (first time deactivates CUSTOM MEMORY and second time activates it). After modifying the recalled setting, it can be stored by pressing the MEMORY switch and "1" (or "2") switch simultaneously.
- The stored memories are held in the DIGITAL COMPOSER even after the NS-50 power has been switched off.

MAGIC FOOT

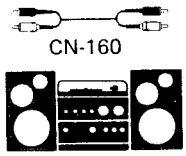


When the provided Foot Switch or the optional Pedal Keyboard (NS-P10) is connected, intro/fill-in of rhythm, bend, sustain or start/stop can be operated by foot.
Operate the foot switch after selecting the function with the MAGIC FOOT switch.



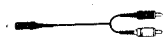
CONNECTION TERMINALS & PITCH CONTROLS

AUX IN/AUX OUT terminals

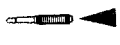


To connect a stereo system or tape deck, use a CN-160 Connection cord (stereo phono plugs – stereo phono plugs).

AUX IN terminals can also be used to input the external sound sources expanded through the MIDI terminal.



To connect a monaural radio cassette recorder, etc., use a CN-132 Connection cord (stereo phono plugs – mono miniplug).

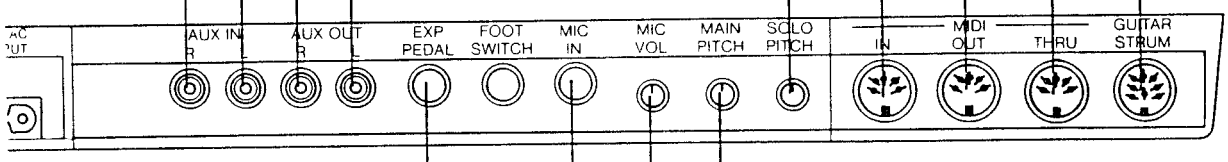


To connect a mono keyboard amp or guitar amp, use a CN-132 connection cord together with an AP-100 Plug Adapter (mono miniplug – mono standard phone plug).

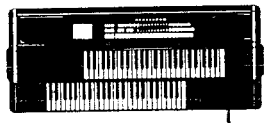
GUITAR STRUMBOARD connector
The optional KG-10 Guitar Strumboard lets you trigger the timing of accompaniment chords of the NS-50, like a rhythm guitar or harp arpeggio. This "6-string" instrument uses one of the LOWER PRESETS voices as the sound source. This optional unit is ideal for ensemble play with someone who cannot play a keyboard.

MIDI IN/OUT/THROUGH terminals
(see next page)

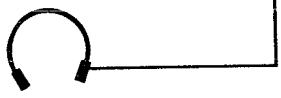
SOLO PITCH control
Adjusts the pitch of the SOLO SYNTHE PRESETS, BASS and ARPEGGIO.



MAIN PITCH control
Adjusts the pitch of the UPPER PRESETS.

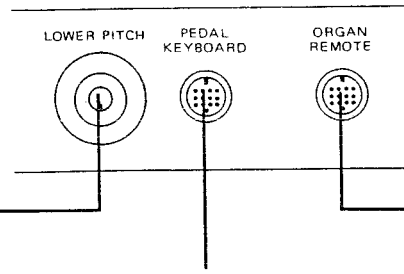


MIC IN jack/MIC VOL control
Connect a mono microphone or electric guitar and adjust the volume with the control. The DIGITAL EFFECTOR effects can also be used for the voice or guitar. See page 4.



HEADPHONE jack
For private playing/listening, use stereo headphones such as the H-810 or HA-M70.
The headphone jack is located between the upper and lower manuals on the right-hand side of the front panel.

EXP PEDAL connector
Using the KX-20 Expression Pedal, the master volume can be controlled by foot.
This is also used to connect the Exp. Pedal on the Pedal Keyboard Unit (NS-P10).



ORGAN REMOTE terminal
Connect the remote control unit of the Organ Expander NS-T90 to this terminal.

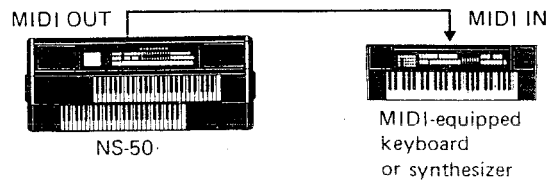
LOWER PITCH control
Adjusts the pitch of the LOWER PRESETS and RHYTHM ACCOMP.

PEDAL KEYBOARD terminal
Connect the optional Pedal Keyboard Unit (NS-P10) using this terminal.

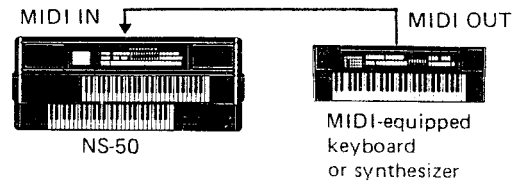
MIDI (Musical Instruments Digital Interface)

(1)

Playing a MIDI-equipped keyboard instrument by playing the NS-50:

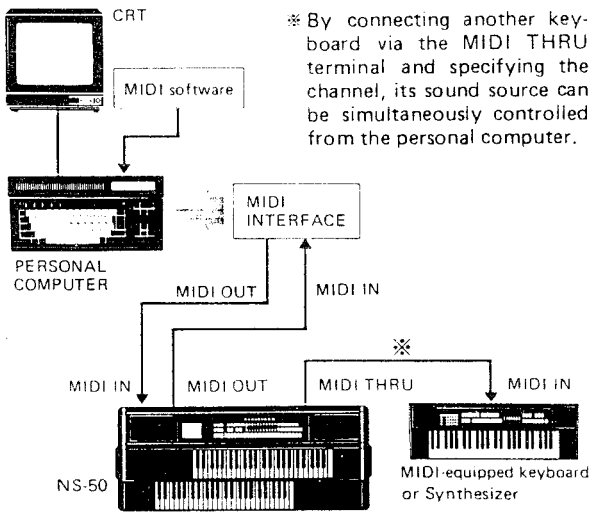


Playing the NS-50 by playing another MIDI-equipped keyboard:



(2)

For more sophisticated music composing/editing, connect a personal computer via a MIDI interface unit. The sound sources in the NS-50 can be controlled while monitoring on the CRT display.



※ By connecting another keyboard via the MIDI THRU terminal and specifying the channel, its sound source can be simultaneously controlled from the personal computer.

The NS-50 is an electronic orchestra incorporating several preset sound sources and each of them are assigned to independent channel numbers. By specifying the channel numbers on the personal computer, music can be edited for each sound source.

	Receiving	Transmission
Channel	CH1 Upper CH2 Lower CH14 Arpeggio CH15 Bass CH16 Rhythm } With Fascinating Chord OFF	CH1 Upper CH2 Lower (With Fascinating Chord OFF) CH15 Bass (with Normal, Custom Bass ON)
Real time	Start FAH Stop FCH Timing clock F8H	Start Stop Timing clock
Control change	Sustain 40H Bend 41H Fill-in 44H	Sustain 40H Bend 41H Fill-in 44H

TROUBLESHOOTING

No arpeggio or accompaniment sound.

- The arpeggio and accompaniment are produced only when the FASCINATING CHORD has been set to "ONE FINGER" or "MULTI FINGER" and the rhythm has been started.

No microphone sound.

- After connecting a microphone or electronic musical instrument to the MIC IN jack, it is necessary to adjust the MIC VOL control.

Automatic accompaniment does not stop.

- When the CHORD MEMORY switch is on, the accompaniment continues even after the lower manual keys are released. Press the START/STOP switch to stop the accompaniment.

Automatic accompaniment and rhythm stops automatically.

- When the SYNCHRO START is on and CHORD MEMORY is off, the FASCINATING CHORD and rhythm are played only while lower manual keys are depressed. They stop automatically when the keys are released. (See page 7.)

Bass and arpeggio are out of tune with the chord being played.

- When a complex chord is played in the MULTI FINGER mode, the chord sound is produced as pressed, but the bass and arpeggio are produced after being processed by the microcomputer, which converts the played chord into one of nine basic chords and thus they may sometimes differ from the chord actually played.

Sound replayed by COMPUCORDER is different from that recorded.

- As above, sound is recorded in the COMPUCORDER after being processed by the microcomputer. The replayed chord could be different from that intended when recording.

Sound is distorted.

- This sometimes happens when the volume setting on the NS-50 is too high.

ULTRA CHORD does not function.

- ULTRA CHORD functions when an accompaniment chord is played on the lower manual. However, ULTRA CHORD is possible in REPLAY (COMPUCORDER) where the accompaniment is played automatically.
- When the Guitar Strumboard is connected and set to ON, ULTRA CHORD may sometimes be ineffective.

No accompaniment sound.

- When the Guitar Strumboard connected is set to ON, the LOWER PRESETS sound is produced from the Guitar Strumboard and not from the keys.
- Accompaniment sound will not be heard if no variation switch [1] [2] [3] [4] is pressed (with no LED lit) on the DIGITAL COMPOSER; or if CUSTOM RHYTHM 1 or 2 is selected and there is no accompaniment variation pattern stored in it, or if the MULTI-EQUALIZER volume controls are set to the lowest positions.

DIGITAL EFFECTOR does not function.

- DIGITAL EFFECTOR does not function when the DIGITAL EFFECTS SELECTOR for each channel is set to OFF, even if one of the DIGITAL EFFECTOR switches is set to ON. (See page 4.)

Bass sound is too long or short.

- Adjust it using the BASS SUSTAIN knob on the VOLUME controls.

Replay of stored melody different from melody recorded.

- When recording the melody with Melody Record switch, Melody [1] and Melody [2] cannot be stored continuously.

SPECIFICATIONS

Number of keys	
Upper manual	49
Lower manual	49
Upper Presets	10: String Ensemble, Hawaiian, Guitar, Organ, Jazz Organ, Electric Piano, Harpsichord, Jazz Flute, Clarinet, Piano, Vibraphone
Lower Presets	6: String Ensemble, Brass Ensemble, Organ, Vocal Ensemble, Piano, Electric Piano
Solo Synthe Presets	8: Trumpet, Trombone, Pan Flute, Oboe, Saxophone, Synthesizer Tone, Piano, Guitar
Switches	Solo Cancel, Solo-to-Lower/ Solo-to-Bass
Digital Effector	
Switches	Delay, Echo, Flanger, Full, Long/Short, Selector switch x 6
Effects	
Switches	Upper Sustain, Lower Sustain Organ Tremolo
Controls	Upper Sustain, Bass Sustain
Ultra Chord	Closed, Open
Magic Foot	Intro/Fill-In, Bend, Sustain, Start/Stop
Full PCM Stereo Rhythm	
Basic rhythms	14 (x 4 vari = 56): Waltz, Polka/ March, Samba, Latin, Bossa Nova, Tango, Disco, Rock'n'Roll, Rock 1, Rock 2, Reggae, Slow Rock, Swing, Shuffle Rock
Switches & controls	Start/Stop, Synchro Start, Intro/Fill In, Hand Clap/Tambourine, Manual Drums, Custom Rhythm 1, Custom Rhythm 2, Tempo control, Beat Conductor
Fascinating Chord	
Modes	Normal, One Finger, Multi Finger
Functions	Chord Memory, Bass/Extra Bass, Guitar/Piano
Digital Composer	
Variation switches	Intro/Fill in (4 variations), Rhythm (4 variations), Bass (4 variations), Rhythm Accompaniment (4 variations), Arpeggio (4 variations)
Melody memory	2 tracks: Compose, Clear, Solo, Orchestra
Compucorder	
Memory tracks	2: Select 1 (80 bars), Select 2 (80 bars)
Switches	Chord Record, Variation Record (Intro/Fill In, Rhythm, Bass, Accompaniment, Arpeggio), Melody Record (approx. 500 notes x 2)
Custom Memory	
Memory tracks	2: Memory 1, Memory 2
Multi-Equalizer	Rhythm, Bass, Arpeggio, Rhythm Accompaniment, Accompaniment, Orchestra, Solo, Master Volume control
Auxiliary terminals	AC IN, Voltage selector, AUX OUT R/L, AUX IN R/L, Headphones, MIC IN, MIC Volume, Main Pitch, Solo Pitch, Lower Pitch, Guitar Strum, MIDI IN, MIDI OUT, MIDI THRU, EXP. Pedal, Pedal Keyboard, Organ Remote
Power supply	AC 120/220/240 V switchable, 50/60 Hz
Power output	4 W x 2
Speakers	14 cm x 2
Weight	25.5 kg
Dimensions	1223(W) x 217(H) x 492(D) mm
Power consumption	34 W
Provided accessories	AC cord, Owner's manual, Digital Composer (KE-10), Foot Switch (KF-10)

Optional accessories

- NS-P10 13-key (one-octave) Pedal Keyboard
- NS-B20 Exclusive Bench
- NS-S10 Exclusive Stand
- NS-T90 9-Band Full-Coupler Organ Expander
- H-810 Stereo Headphones
- HA-M70 Stereo Headphones
- H-V1 Stereo Headphones/Microphone Headset
- KX-20 Expression Pedal
- KG-10 Guitar Strumboard
- CN-160 Connection cord (stereo phono plugs – stereo phono plugs)
- CN-132 Connection cord (stereo phono plugs – mono miniplug)
- AP-100 Plug Adapter (mono miniplug – mono standard phone plug)

Design and specifications subject to change without notice.